

type of operation is indicated. In some of these cases a minor operative procedure of adductor tenotomy and manipulation combined with psoas release, capsulotomy, and forage has been deemed advisable, except in those with symptoms related to a subluxing hip seen on radiographs. These minor operations keep the patient in hospital for only two weeks. Major procedures are unlikely to be successful in maintaining professional sportsmen in vigorous active sport.

However, in those cases seen for the first time with advanced symptoms, especially those with subluxing hips, it has been found a waste of time to attempt conservative treatment, or the above described minor operations. These cases can only be helped by one of the major procedures.

I am convinced, nevertheless, if the medical profession diagnosed osteoarthritis in the earliest stages and the patient is prepared to carry out an exacting programme of self-treatment, the symptoms of many cases could be aborted or the progress of the disease held in check for many years without operation.—I am, etc.,

London W.1.

W. E. TUCKER.

Toxicity of Polytetrafluoroethylene

SIR,—Polytetrafluoroethylene (C_2F_4)_n is an inert fluorocarbon polymer with excellent dielectric properties and a wide working temperature range of +250° C. down to liquid nitrogen temperature. It has a wide variety of uses mainly in electrical, electronic, and chemical engineering. Very few substances will adhere to its surface, and for this reason it has more recently been used as a lining for food containers and cooking utensils. It has also been tried in selected surgical applications with promising results.

The cold polymer is harmless on ingestion, in contact with the skin, or implanted in living tissues.¹ When heated above 250° C. it begins slowly to give rise to small amounts of decomposition products, some of which are toxic.

The accidental inhalation of fumes from the overheated polymer by workmen produces an influenza-like illness which has been described elsewhere.² The illness follows a latent interval of a few hours and resolves within a day or two with no subsequent ill-effects. This may happen, for example, when the polymer is heated to comparatively high temperatures (350–400° C.) in an oven, an extruder, or some other equipment used to fabricate it, but it is easily prevented by the intelligent use of exhaust ventilation. The most frequent cause, however, is probably smoking tobacco that has been contaminated with the powder.³ Some years ago it was alleged that a workman died as the result of smoking a cigarette laid for a short time in contact with "teflon" film, and although subsequently shown to be without foundation in fact, the rumour has continued to circulate. The Minister of Labour stated in the House of Commons that the Government had no knowledge of such an incident.⁴ In a recent letter Mack⁵ repeated the rumour, but he subsequently retracted the assertion.⁶

"Fluon" is used in the food industry as linings for bakers' roll mills, baking tins, and cooking utensils. Truffert⁷ and Troyanowsky⁸ concluded from their investigations that it was safe for this purpose and millions of utensils have since been manufactured in France, America, and elsewhere with no reports of

subsequent illness. The Food and Drug Administration of the United States Department of Health have given a similar approval for domestic use of the plastic.

In view of these facts and the intensive investigation to which the polymer has been submitted it seems reasonable to assume that its hazards have been exaggerated.—I am, etc.,

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Acute Pancreatitis with Methaemalbuminaemia

SIR,—Your correspondents Drs. B. E. Northam, D. S. Rowe, and Mr. N. E. Winstone (January 27, p. 260) report the occurrence of methaemalbumin in six out of six cases of haemorrhagic pancreatitis. It would be of interest to know in how many cases methaemalbuminaemia was an incidental finding and in how many it was specially sought. The occurrence in pancreatitis of methaemalbuminaemia sufficiently severe to give the plasma an obvious brown colour is presumably rare. Many thousands of specimens of plasma or serum from cases of acute pancreatitis must have been studied and it seems unlikely that the brown colour due to methaemalbumin has simply been overlooked in the past.

We have recently observed gross methaemalbuminaemia in a patient who was admitted with a severe myocardial infarct and who developed acute pancreatitis associated with anuria on the third day. The patient died on the 11th day. Necropsy revealed extensive posterior myocardial infarct, acute haemorrhagic pancreatitis, and renal tubular necrosis. There was no free fluid in the peritoneal cavity, but there was extensive haemorrhagic necrosis of the pancreas and fat necrosis.

In this case the brown colour of the plasma first suggested methaemalbuminaemia. The pigment was identified on spectroscopy and by Schumm's test. Paper electrophoresis confirmed the presence of methaemalbumin and revealed also a small amount (less than 25 mg./100 ml.) of haptoglobin all of which was combined with haemoglobin or methaemoglobin. The plasma haptoglobin was thus much lower than would be expected in a patient who had suffered a myocardial infarct,¹ which suggests that there had been some release of (met)haemoglobin into the circulation. The haptoglobin present was saturated with (met)haemoglobin and it is likely that there had been at one stage some (met)haemoglobin in the plasma which could have been the source of some methaemalbumin. Renal clearance of free haemoglobin in this patient would have been negligible.—We are, etc.,

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